

Listing of Claims:

1. (currently amended) Device for use in sports and games for detecting the position of impact of a moveable object, ~~such as a ball, in particular tennis ball, baseball or the like,~~ comprising:

DO NOT a sheet or mat with an outer layer and an inner layer, the sheet or mat forming a target
ENTER surface; ~~and having embedded therein~~
/S.K. /

04/15/2011 a plurality of electrically conductive elements embedded in the sheet or mat and forming pressure sensitive switches distributed over the target surface and communicating with electronic circuits for outputting, processing and displaying electrical signals from pressure sensitive switches when activated by said impact or pressure, ~~characterized in that:~~

[[-]] wherein the plurality of electrically conductive elements comprise

a first pattern of electrically conductive elements provided at an ~~the~~ underneath side of the outer layer of the sheet or mat ~~is provided with a first pattern of electrically conductive elements~~ at least at the positions of the pressure sensitive switches, and

[[-]] a second pattern of electrically conductive elements provided at an ~~the~~ upper side of the inner layer of said sheet or mat ~~is provided with a second pattern of electrically conductive elements~~ at least at the positions of the pressure sensitive switches,

[[-]] the first pattern of electrically conductive elements and the second pattern of electrically conductive elements ~~are~~ being arranged so as to enable temporary contact to be established at the positions of the pressure sensitive switches, and

[[-]] an insulation layer between said outer and inner layers is provided with cavities or holes at the positions of the pressure sensitive switches for establishing temporary contact therein, and

from each cavity or hole at least one opening directed sideways for air movement during said impact or pressure activation, and wherein ~~[[,]]~~ at least one of the first and second patterns of electrically conductive elements~~[[,]]~~ is subdivided into a number of individual zones, where each zone comprises a plurality of said pressure sensitive switches, and the electronic circuits have separate connections to each of said individual zones.

2. (currently amended) The device ~~Device~~ according to claim 1, wherein one of a ~~the character and/or the~~ and a thickness of the insulation layer ~~determine(s)~~ determines the detection sensitivity.

3. (currently amended) The device ~~Device~~ according to claim 1, wherein the second pattern of electrically conductive elements is applied on an upward surface of an inner support layer joined with the inner layer.

4. (currently amended) The device ~~Device~~ according to claim 1, intended configured for use with a ~~moveable object, in particular in the form of~~ a ball, having a given size, wherein said positions of the pressure sensitive switches are mutually spaced in such a way that the ball ~~or the object~~ by impact or pressure will activate at least two pressure sensitive switches.

5. (currently amended) The device ~~Device~~ according to claim 1, wherein at least one of said first pattern of electrically conductive elements and ~~and/or~~ said second pattern of electrically conductive elements ~~are/is~~ is formed by printed circuit elements.

6. (currently amended) The device ~~Device~~ according to claim 1, wherein the outer layer of the sheet or mat is further provided with a hollow and flexible, dome-shaped protrusion at each position of the pressure sensitive switches, each zone comprising a number of protrusions.

7. (currently amended) The device ~~Device~~ according to claim 6, wherein said hollow and flexible protrusions ~~inherently provides for~~ provide a sufficient degree of elastic deformation when activated by said impact or pressure, which also affects the degree of detection accuracy.

8. (currently amended) The device ~~Device~~ according to claim 6, wherein said hollow and flexible protrusions are further provided with spring elements, ~~preferably of metal,~~ for obtaining a sufficient degree of elastic deformation when activated by said impact or pressure.

9. (currently amended) The device ~~Device~~ according to claim 6, wherein the shape of said protrusions is substantially circular as seen in plan view.

10. (currently amended) The device ~~Device~~ according to claim 1, wherein the surface of the sheet or mat is provided with at least one line corresponding to a line that is to be found on a standard field or court for the sport or game concerned, where at least some of the zones border said at least one line.

11. (currently amended) The device ~~Device~~ according to claim 10, wherein said at least one line, located or provided on said surface, contains line zones having pressure sensitive switches, preferably with said line zones arranged in the longitudinal direction of said at least one line.

12. (currently amended) The device ~~Device~~ according to claim 2, wherein the second pattern of electrically conductive elements is applied on an upward surface of an inner support layer joined with the inner layer

13. (currently amended) The device ~~Device~~ according to claim 2, ~~intended configured~~ for use with a ~~moveable object, in particular in the form of a ball~~, having a given size, wherein said positions of the pressure sensitive switches are mutually spaced in such a way that the ball or the object by impact or pressure will activate at least two pressure sensitive switches.

14. (currently amended) The device ~~Device~~ according to claim 3, ~~intended configured~~ for use with a ~~moveable object, in particular in the form of a ball~~, having a given size, wherein said positions of the pressure sensitive switches are mutually spaced in such a way that the ball or the object by impact or pressure will activate at least two pressure sensitive switches.

15. (currently amended) The device ~~Device~~ according to claim 2, wherein at least one of said first and/or pattern of electrically conductive elements and said second pattern of electrically conductive elements ~~are/is~~ is formed by printed circuit elements.

16. (currently amended) The device ~~Device~~ according to claim 3, wherein at least one of said first and/or pattern of electrically conductive elements and said second pattern of electrically conductive elements ~~are/is~~ is formed by printed circuit elements.

17. (currently amended) The device ~~Device~~ according to claim 4, wherein at least one of said first and/or pattern of electrically conductive elements and said second pattern of electrically conductive elements ~~are/is~~ is formed by printed circuit elements.

18. (currently amended) The device ~~Device~~ according to claim 2, wherein the outer layer of the sheet or mat is further provided with a hollow and flexible, dome-shaped protrusion at each position of the pressure sensitive switches, each zone comprising a number of protrusions.

19. (currently amended) The device ~~Device~~ according to claim 3, wherein the outer layer of the sheet or mat is further provided with a hollow and flexible, dome-shaped protrusion at each position of the pressure sensitive switches, each zone comprising a number of protrusions.

20. (currently amended) The device ~~Device~~ according to claim 4, wherein the outer layer of the sheet or mat is further provided with a hollow and flexible, dome-shaped protrusion at each position of the pressure sensitive switches, each zone comprising a number of protrusions.

21. (currently amended) The device ~~Device~~ according to claim 5, wherein the outer layer of the sheet or mat is further provided with a hollow and flexible, dome-shaped protrusion at each position of the pressure sensitive switches, each zone comprising a number of protrusions.

22. (currently amended) The device ~~Device~~ according to claim 7, wherein said hollow and flexible protrusions are further provided with spring elements, ~~preferably of metal,~~ for obtaining a sufficient degree of elastic deformation when activated by said impact or pressure.

23. (currently amended) The device ~~Device~~ according to claim 7, wherein the shape of said protrusions is substantially circular as seen in plan view.

24. (currently amended) The device ~~Device~~ according to claim 8, wherein the shape of said protrusions is substantially circular as seen in plan view.

25. (currently amended) The device ~~Device~~ according to claim 2, wherein the surface of the sheet or mat is provided with at least one line corresponding to a line that is to be found on a standard field or court for the sport or game concerned, where at least some of the zones border said at least one line.

26. (currently amended) The device ~~Device~~ according to claim 3, wherein the surface of the sheet or mat is provided with at least one line corresponding to a line that is to be found on

a standard field or court for the sport or game concerned, where at least some of the zones border said at least one line.

27. (currently amended) The device ~~Device~~ according to claim 4, wherein the surface of the sheet or mat is provided with at least one line corresponding to a line that is to be found on a standard field or court for the sport or game concerned, where at least some of the zones border said at least one line.

28. (currently amended) The device ~~Device~~ according to claim 5, wherein the surface of the sheet or mat is provided with at least one line corresponding to a line that is to be found on a standard field or court for the sport or game concerned, where at least some of the zones border said at least one line.

29. (currently amended) The device ~~Device~~ according to claim 6, wherein the surface of the sheet or mat is provided with at least one line corresponding to a line that is to be found on a standard field or court for the sport or game concerned, where at least some of the zones border said at least one line.

30. (currently amended) The device ~~Device~~ according to claim 7, wherein the surface of the sheet or mat is provided with at least one line corresponding to a line that is to be found on a standard field or court for the sport or game concerned, where at least some of the zones border said at least one line.

31. (currently amended) A device Device according to claim 8, for use in sports and games for detecting the position of impact of a moveable object, comprising:

a sheet or mat with an outer and an inner layer, the sheet or mat forming a target surface;

a plurality of electrically conductive elements embedded in the sheet or mat and forming pressure sensitive switches distributed over the target surface and communicating with electronic circuits for outputting, processing and displaying electrical signals from pressure sensitive switches when activated by said impact or pressure,

wherein the plurality of electrically conductive elements comprise

a first pattern of electrically conductive elements provided at an underneath side of the outer layer of the sheet or mat at least at the positions of the pressure sensitive switches, and

a second pattern of electrically conductive elements provided at an upper side of the inner layer of said sheet or mat at least at the positions of the pressure sensitive switches, and

the first pattern of electrically conductive elements and the second pattern of electrically conductive elements being arranged so as to enable temporary contact to be established at the positions of the pressure sensitive switches; and

an insulation layer between said outer and inner layers is provided with cavities or holes at the positions of the pressure sensitive switches for establishing temporary contact therein, and from each cavity or hole at least one opening directed sideways for air movement during said impact or pressure activation, wherein at least one of the first and second patterns of electrically conductive elements is subdivided into a number of individual zones, where each zone comprises

a plurality of said pressure sensitive switches, and the electronic circuits have separate connections to each of said individual zones,

wherein the outer layer of the sheet or mat is further provided with a hollow and flexible, dome-shaped protrusion at each position of the pressure sensitive switches, each zone comprising a number of protrusions, said hollow and flexible protrusions further including spring elements for obtaining a sufficient degree of elastic deformation when activated by said impact or pressure, and

wherein the surface of the sheet or mat is provided with at least one line corresponding to a line that is to be found on a standard field or court for the sport or game concerned, where at least some of the zones border said at least one line.

32. (currently amended) The device ~~Device~~ according to claim 9, wherein the surface of the sheet or mat is provided with at least one line corresponding to a line that is to be found on a standard field or court for the sport or game concerned, where at least some of the zones border said at least one line.